

REMARKS

A proposed drawing is submitted to facilitate understanding of the invention and to address the drawing objection noted in the Official Action. No new matter is introduced by the new drawing.

The specification has been amended to make editorial changes to place the application in condition for allowance at the time of the next Official Action.

Claims 1-4 were previously pending in the application. New claims 5-8 are added. Therefore, claims 1-8 are presented for consideration.

Claims 1-4 are amended and are believed to address the 35 USC §112, second paragraph rejections noted in the Official Action.

Claims 1-4 are rejected as anticipated by SAKAGUCHI et al. 5,837,624.

Reconsideration and withdrawal of the rejection are respectfully requested because the reference does not disclose or suggest a dielectric material comprising mica paper which is cemented to the fabric as recited in claim 1 of the present application.

The recited dielectric material comprising mica paper is consistent with the plain meaning of the word dielectric.

Specifically, a dielectric is a non-conductor of electricity.

As seen in Figure 5 of SAKAGUCHI et al., the glass cloth (fabric) is impregnated with resin and then laminated with a metal foil on the exterior thereof. Accordingly, SAKAGUCHI et al. teach a metal foil connected to the fabric, not a dielectric material comprising mica paper which is cemented to the fabric as recited in claim 1 of the present application. As the reference does not disclose that which is recited, the anticipation rejection is not viable. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 2-4 depend from claim 1 and further define the invention and are also believed patentable over SAKAGUCHI et al.

Claims 1-4 are rejected as unpatentable over LANIA et al. 3,914,495 in view of SAKAGUCHI et al.

LANIA et al. at column 3, lines 59-67 teach a tape 14 comprising a woven glass fiber cloth 22, a continuous polyester film 24 and a fire-retardant plastic laminate adhesive 26 therebetween. Accordingly, LANIA et al. teach a polyester film adhered to the glass fiber cloth, not a dielectric material comprising mica paper which is cemented to the fabric as recited in claim 1 of the present application. As set forth above, SAKAGUCHI et al. do not teach or suggest a dielectric material comprising mica paper which is cemented to the fabric. The

above-noted feature is missing from each of the references, is absent from the combination and thus is not obvious to one having ordinary skill in the art.

In addition, MPEP §2143.01 states that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

LANIA et al. is directed to a fire-retardant tape that is wound around conductive wires 12 as seen in Figure 1 of LANIA et al. SAKAGUCHI et al. disclose a base material for printed wiring boards. Such wiring boards are substantially rigid or in any event are not designed to be wound around other elements. Accordingly, one in the tape manufacturing industry would not be motivated to search the non-analogous art in the printed wiring board field.

Specifically, each of the claims of SAKAGUCHI et al. is directed to the use of a woven glass cloth impregnated with resin for use as a base material for printed wiring board material. SAKAGUCHI et al. do not teach or suggest the use of the woven glass cloth of SAKAGUCHI et al. for any other purpose other than a printed wiring board and especially do not teach the use in a fire-retardant insulating tape wrap. Accordingly, the references

themselves do not suggest the desirability of the combination and thus the resultant combination would not be obvious to one of ordinary skill in the art.

New claims 5-8 also recite a dielectric mica paper material connected to the fabric. The comments above regarding claim 1 are equally applicable to claims 5-8. Accordingly, it is believed that the new claims avoid the rejections under §102 and §103 and are allowable over the art of record.

By way of further explanation, since the yarn in the warp direction is thicker than the yarn used in the weft direction, the thread density is reduced and the mesh size becomes larger. By using few, but relatively thick and thus tear-proof warp threads, a fabric construction is achieved in accordance with the invention which meets the requirements for a low weight fabric which is resistant to initiation of edge tearing. Resistance to initiation of edge tearing is an essential feature of the insulating tape since that tape is used for wrapping an electrical conductor which generally has a rectangular or quadratic profile. Therefore, not only the tensile strength of the insulating tape but mainly the edge tear initiation strength is important. The warp threads do not tear jointly during winding but proceeding from one edge of the tape which has been laid down on the conductor, thread by thread.


Therefore, the strength of the individual warp threads is of special importance for the tear strength of the insulating tape (see page 3 of the present specification, lines 10-25).

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

Attached hereto is a marked-up version showing the changes made to the specification and claims. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

Respectfully submitted,

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"VERSION WITH MARKINGS TO SHOW CHANGES MADE"

IN THE SPECIFICATION:

Page 1, the paragraph, beginning on line 16, has been amended as follows:

--[An insulating tape as claimed in the preamble of claim 1 can be taken] Insulating tapes are known for example from DE 38 24 254 A and EP 0 194 974 B. This insulating tape contains a mechanically fixed supporting body of glass silk fabric with a weight per unit area of typically 20 to 40 g/cm² and a layer of dielectrically high quality material which is applied to this fabric, for example fine mica or mica paper, with a weight per unit area which is a multiple of the weight per unit area of the fabric. The proportion by weight of the dielectrically high quality material determines the quality, especially the breakdown strength, of insulation produced from the insulating tape.--.

Page 5, the table, beginning on line 1, has been amended as follows:

Insulating tape	1 (Prior art)	2 (Prior art)	3 Invention
Weight per unit area, g/cm ²	23	33	24
Warp thread weight, tex	5.5	11	11
Woof thread weight, tex	5.5	5.5	5.5
Thread density, warp threads, per cm	27	24	16
Thread density, woof threads, per cm	15	11	10
Tensile strength in warp direction, N/cm	80	140	104
Edge tear initiation strength, N	8	16	[8] <u>16</u>
Porosity, glass side, s/100 ml	100	180	100

Page 5, the paragraph, beginning on line 11, has been amended as follows:

--It is clear from this table that in contrast to the insulating tapes 1 and 2 which are considered prior art, in insulating tape 3 the warp threads are formed by a coarse yarn and have a low thread density. This yields a coarse-mesh fabric with a weight per unit area which corresponds to the weight per unit area of the fine-mesh fabric according to insulating tape 1 which contains warp and woof threads of finer yarn. In contrast to this fabric, the fabric of the insulating tape 3 however has an edge tear initiation strength which is twice as high. The fabric of the insulating tape 2 has a comparatively high edge tear initiation strength, but it is much heavier so that insulation produced using it has a much lower dielectric strength than the correspondingly made insulation from the insulating tape 3.--.

IN THE CLAIMS:

Claim 1 has been amended as follows:

--1. (amended) Insulating tape for wrapping an electrical conductor [with] comprising:

a fabric which is used as [the supporting body with] a carrier material and consisting of warp threads which are routed in the direction of winding, consisting of a first yarn, and [with woof] of weft threads of a second yarn which is finer than the first yarn; and [with]

a [dielectrically high quality] dielectric material comprising mica paper which is [applied] cemented to [a] the fabric, [characterized in that] wherein the fabric is made coarse-meshed, and

[that] wherein the warp threads have a thread density [such] so that the weight per unit area of the fabric [corresponds] is equal to the weight per unit area of a fine-mesh fabric which only contains warp and [woof] weft threads of the second, finer yarn.--

Claim 2 has been amended as follows:

--2. (amended) Insulating tape as claimed in claim 1, [in which a] wherein the first and second yarn are made of the same material, wherein the thread weights from the first to the second yarn [acts roughly like] have a ratio of about 2 to 1.--

Claim 4 has been amended as follows:

--4. (amended) Insulating tape as claimed in claim 3, wherein the insulating tape [can be exposed to] withstands an edge tear initiation force between 12 and 18 N.--